REMARKS

In the latest Office Action, claim 21 was rejected under 35 U.S.C. 102(b) as being anticipated by JP 08-027439 (Takemura). Applicants have provided a machine translation of Takemura with this amendment. Takemura teaches an anticorrosive tape containing a rust-preventing agent, which tape is used on outdoor piping. The Examiner asserts that Takemura's tape would be capable of performing the recited intended use of being placed on the surface of a metal base ply of a printing blanket. However, there is no teaching or suggestion in Takemura that their tape may be used for such a purpose, nor has the Examiner provided any evidence that Takemura's tape would be capable of reducing corrosion and abrasion of printing blankets/cylinders when used on a printing blanket construction.

Nor does Takemura teach a multi-layer laminate comprising "two or more polymer layers with a corrosion-inhibiting polymeric layer therebetween" as claimed. Rather, Takemura coats both sides of a single layer nonwoven polyester base material 1 with a binder 2 containing the rust-preventing agent such that the outer surfaces of the tape contain the rust-preventing agent. See the enclosed drawing figure. While the Examiner opines that the rust-prevention agent penetrates the base material, applicants could find no such teaching in the reference. Even if the agent does penetrate the base material, Takemura's structure would not constitute two or more polymer layers with a corrosion-inhibiting polymer layer therebetween as claimed. Claim 21 is not anticipated by, and is clearly patentable over Takemura.

Claims 1, 2, 4-9, 21, and 22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bresson et al. (US 5,352,507) in view of Linska (US 4,766,811). Applicants wish to point out that while claim 1 is included in the list of pending and rejected claims, claim 1 was previously cancelled in the amendment filed on April 4, 2005. Accordingly, applicants will address the rejection with regard to claims 2, 4-9, 21 and 22.

The Examiner maintains that it would have been obvious to replace Bresson's adhesive layer 3 with the adhesive-coated foil of Linska, asserting that Linska teaches "a double-side coated adhesive foil applied to the printing blanket." However, as applicants previously pointed out to the Examiner, Linska does not teach or suggest applying the foil to a printing blanket construction, but rather applies the foil (2) to a cover plate (1) on a printing cylinder to prevent corrosion of the cylinder surface. See the abstract and Fig. 2. The Examiner further asserts that "the adhesive-coated printing blanket is then wrapped about the cylinder so that the printing blanket is adhered to the cylinder by the double-sided coated adhesive foil." Again, the Examiner's interpretation of Linska is incorrect. Linska teaches that the cover plate is wrapped around the cylinder. See the abstract. Nowhere does Linska teach or suggest that his cover plate functions as a printing blanket, nor does Linska teach the use of his adhesive foil on a printing blanket comprising a printable surface layer and a metal base ply as claimed.

Further, as previously pointed out, Linska does not teach or suggest a polymeric film containing corrosion inhibiting additives as recited in claim 21. Rather, Linska's corrosion-resistant foil is comprised of stainless steel (see col. 2, lines 42-45). While the Examiner asserts that the outer adhesive layer of the foil reads on the claimed polymer, there is no teaching or suggestion in Linska that his adhesive layers function as a protective polymer for the purpose of reducing corrosion. Even if they did, the claimed protective film would not be met as Linska's structure does not constitute a multi-layer laminate comprising two or more polymers with a polymer film therebetween which contains corrosion-inhibiting additives.

With regard to claim 22, applicants have further amended this claim to recite the minimum thickness of the polymeric layer. As taught in the specification, the thickness of the polymer layer is at least about 0.0013 cm and may be up to about 0.51 cm. See the specification at page 5, lines 18-20. There is no motivation to modify the thickness of Linska' adhesive layers as Linska clearly teach the use of very thin layers and does not teach or suggest the use of such layers as protective layers which inhibit corrosion and abrasion. See col. 2, lines 47-49.

Further, as applicants have previously pointed out, Bresson does not teach or suggest a desire for reducing corrosion and abrasion of a printing cylinder; accordingly, there is no motivation to use Linska's foil in place of Bresson's adhesive layer. The Examiner has failed to carry his evidentiary burden of establishing a prima facie case of obviousness.

For all of the above reasons, applicants submit that claims 2, 4-9, and 21-22, as amended, are patentable over the cited references. Early notification of allowance is respectfully requested.

Respectfully submitted,

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PATENT ABSTRACTS OF JAPAN

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(54) CURABLE TYPE ANTICORROSIVE TAPE

(57)Abstract:

PURPOSE: To obtain a curable type anticorrosive tape, rich in heat resistance and capable of realizing an anticorrosive surface having a high surface hardness.

CONSTITUTION: This curable type anticorrosive tape is obtained by forming tacky agent layers prepared by adding an incombustible agent, a rust preventing agent and a light shielding agent, etc., to a resin curable in air and waxes as principal components on both surfaces of a substrate, housing the resultant tape in an airtight container and removing a gas in the container. The amounts of the resin and waxes based on the total amount of the tacky agent composition except a solvent are 25-45wt.% resin and 8-18wt.% waxes.

LEGAL STATUS

[Date of request for examination]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001] This invention relates to a hardening mold corrosion-proof tape. Furthermore, in detail, it is rich in thermal resistance and is related with the hardening mold corrosion-proof tape which offers the large corrosion prevention side of surface hardness.
[0002]
[Description of the Prior Art] For the corrosion prevention of piping put to sunlight on piping for migration and the outdoors of a high-temperature fluid, covering with the coating with which adhesion resin, waxes, the nonflammable-ized agent, the rusr-proofer, the optical cutoff agent, etc. were added by the front face of piping, and the corrosion-proof tape using the same constituent as a binder is more often than before performed as indicated by JP,62-41625,B.
[0003] However, since each an above-mentioned coating and an above-mentioned corrosion-proof tape are lacking in thermal resistance, therefore surface hardness is small again and it is soft When a worker and a check member walked these piping top at the time of construction of piping, and fixed check, fastened it with a rope etc. or ground against a conveyance object at it, the blemish went into the corrosion prevention side by the corrosion-proof tape, and storm sewage invaded and it had become the cause which corrodes piping from this section.
[0004]
[Problem(s) to be Solved by the Invention] This invention cancels the trouble of elegance conventionally like the above, is rich in thermal resistance, and uses as an offer plug the hardening mold corrosion-proof tape which can realize the large corrosion prevention side of surface hardness.
[0005]
[Means for Solving the Problem] This invention the resin which can be hardened in air to both sides of a base material to the binder constituent whole quantity except a solvent 25 - 45 % of the weight, 8 - 18 % of the weight of waxes is used as a principal component, and the binder layer in which the nonflammable-ized agent, the rusr-proofer, the optical cutoff agent, etc. were added by this is prepared, and it is contained by the airtight container, and let the hardening mold corrosion-proof tape characterized by eliminating the gas in this container be the summary.
[0006] In this invention, the resin which can be hardened in air may be the constituent which introduced and denaturalized or was blended [functional group / like a vinyl group / in which a polymerization is possible] with the cross linking agent, the bridge formation accelerator, etc. in well-known resin, such as alkyd resin and acrylic resin, and these. Above all, since a bridge will be constructed if air is touched, and it has the strong coat form engine performance, vinyl modified alkyd resin is suitably used as a constituent which blended waxes, the nonflammable-ized agent, the rusr-proofer, the optical cutoff agent, etc. Moreover, the above-mentioned resin may be used for two or more kinds, being suitably blended by the ratio, although it may be used by the single class.
[0007] Moreover, although an about [3H] hard front face is formed by the pencil degree of hardness which this hardening mold corrosion-proof tape touches air, hardens it, and is mentioned later when the loadings of the above-mentioned resin exceeded 45 % of the weight to the binder constituent whole

quantity except a solvent and corrosion-protection work is carried out using the hardening mold corrosion-proof tape obtained Although this hardening mold corrosion-proof tape touches air and is hardened when corrosion-protection work is carried out using the hardening mold corrosion-proof tape obtained as hardening mold corrosion-proof tape manufacture becomes difficult when a rate of drying mainly becomes early remarkably, and it is less than 25 % of the weight It is H grade by the pencil degree of hardness, and a desired hard degree of hardness is not obtained.

[0008] In this invention, waxes have water repellence, for example, it can use well-known waxes, such as petroleum system waxes, such as paraffin wax and a micro crystallin wax, a coal system wax, an animals-and-plants system wax, a synthetic wax, petrolatum, oxidation petrolatum, oxidation waxes, these metal salts or ester, and a lanolin metal salt.

[0009] Moreover, although this hardening mold corrosion-proof tape touches air and is hardened when the loadings of the above-mentioned waxes exceeded 18 % of the weight to the binder constituent whole quantity except a solvent and corrosion-protection work is carried out using the hardening mold corrosion-proof tape obtained It is H-HB by the pencil degree of hardness, and when a desired large degree of hardness is not obtained and a rate of drying mainly becomes being less than 8 % of the weight early remarkably, it is not desirable at the reason hardening mold corrosion-proof tape manufacture becomes difficult.

[0010] Moreover, in this invention, although a nonflammable-ized agent besides the above-mentioned resin and waxes, a rusr-proofer, an optical cutoff agent, adhesion resin, etc. are added by the binder constituent An aluminum hydroxide etc. can be used for a nonflammable-ized agent. To a rusr-proofer For example, a tannic acid etc. can be used, and aluminum paste etc. can be used for an optical cutoff agent, and selection use of the drugs which discover each well-known engine performance besides these can be suitably carried out along with the purpose of this invention.

[0011] Moreover, as a solvent used using the above-mentioned binder constituent in case a hardening mold corrosion-proof tape is manufactured, although an organic solvent can be used, the amount used is suitably determined by combination of a binder constituent, and is not fixed with combination. Especially as an organic solvent, although not limited, the solvent which dissolves the above-mentioned resin and waxes from ester solvents, such as ketones, such as aliphatic series, such as a terpene, petroleum spirit, petroleum North America Free Trade Agreement, a xylene, toluene, a decalin, and a tetralin, or an aromatic hydrocarbons solvent, methyl isobutyl ketone, a methyl-n-amyl ketone, and a cyclohexanone, butyl acetate, amyl acetate, and isopropyl acetate, is used, choosing it suitably.

[0012] Although the cloth which consists of synthetic fibers which consist of natural fibers, such as cotton and hemp, for example although anythings can be used, such as cloth and polyester, and the nonwoven fabric which consists of these fiber will be mentioned if it is the sheet-like thing which a base material can hold a viscous binder enough in this invention, and has moderate flexibility, it excels in weatherability and the polyester nonwoven fabric which is thin and has high intensity is used especially suitably.

[0013] Moreover, as for these base materials, an about 0.5-0.7mm in thickness, a basis weight 80 - about two 120 g/m thing is used suitably.

[0014]

[Function] Although the binder constituent with which the hardening mold corrosion-proof tape of this invention used the resin which can be hardened in air to both sides of a base material 25 to 45% of the weight to the binder constituent whole quantity except a solvent, and used 8 - 18 % of the weight of waxes as the principal component, and the nonflammable-ized agent, the rusr-proofer, the optical cutoff agent, etc. were added by this is applied Since a binder constituent has gelation in the condition of the viscous solution which is extent which started for a while when waxes are blended with resin in the above-mentioned range and a nonflammable-ized agent, a rusr-proofer, an optical cutoff agent, adhesion resin, etc. are added by this Coating can carry out very easily as it appears also in drying (fingertip desiccation).

[0015] Moreover, since the hardening mold corrosion-proof tape by which coating was carried out like the above was contained by the airtight container and the gas in this container was eliminated, for example, it opened the container and was set as the object of corrosion-protective covering on the occasion of various corrosion-protection work, when it winds around outdoor piping and the front face is covered, a binder layer stiffens a lifting and a binder layer for crosslinking reaction with surrounding air. Therefore, the field where this corrosion-protection work was performed shows after construction the outstanding engine performance which showed the degree of hardness of 2H harder than the surface hardness (pencil degree-of-hardness 1H) of the rigid PVC plate, in addition has been sharply improved in thermal resistance and water absorption. Moreover, a salt fog test, weatherability, insulation resistance, an inflammable test, and many engine performance of tensile strength also clear a value of standard enough.

[0016] Like the above statement, this invention hardening mold corrosion-proof tape after corrosion-protection work Since the field which has thermal resistance and cannot do the large blemish of surface hardness easily is given The corrosion prevention of piping put to sunlight on piping for migration and the outdoors of a high-temperature fluid sake, When it could be used with large applicability, and a worker and a check member walk these piping top, fasten with a rope etc. or grind against the front face of piping and others by the conveyance object at the time of construction of piping, and fixed check A blemish goes into the corrosion prevention side made with the hardening mold corrosion-proof tape of this invention, storm sewage invades from this section and there is no fear of making piping corrode.

[0017]

[Example] Hereafter, this invention is explained based on an example. Measurement evaluation of the corrosion-proof tape obtained in the following examples was respectively carried out by the approach shown below.

[0018] 1. Salt fog test JIS After measuring based on Z-2371 (the salt spray test approach), putting the above-mentioned test piece to a salt fog for 2,000 hours, carrying out rinsing desiccation and exfoliating the corrosion-proof tape from a test piece, the existence of rusting of the front face of a steel plate was observed by viewing, and was evaluated. In addition, the test piece was stuck on 150mm long, 70mm wide, and a steel plate with a thickness of 0.8mm so that each side might be completely covered in the hardening mold corrosion-proof tape of the example of this invention, and the example of a comparison, 23 degrees C, was left for 24 hours and used as the test piece.

[0019] 2. After exfoliating the corrosion-proof tape from the test piece after 2,000-hour exposure in the same test piece as having used the weatherproof test sunshine Weather-O-meter, and having used it by the test of the preceding clause, the existence of rusting of the front face of a steel plate was observed by viewing, and was evaluated.

[0020] 3. Insulation resistance value JIS It measures based on Z-1902 (petrolatum system corrosion-proof tape), and is value-of-standard 1.0x102 Momega and m2. The above was considered as success. In addition, the test piece left 23 degrees C of hardening mold corrosion-proof tapes of the example of this invention with a width of face of 50mm, and the example of a comparison for 24 hours by sticking so that it may wind so that it may lap 50%, and a steel pipe side may be covered completely, and used them as the test piece at the steel pipe of 50mmphi.

[0021] 4. It measured based on the inflammable test Fire Defense Agency and September 25, Showa 51 and the notification No. 57 (fire-resistant decision criterion of the urethane foam as **** material of an outdoor-storage tank), and a value of standard, less than [burn time 120 second], and combustion die length of 60mm or less were considered as success.

[0022] 5. Water absorption JIS It measured based on K-6911 (the thermosetting plastic commercial-test approach).

[0023] 6. -7. thickness, tensile strength, JIS Based on Z-1902 (petrolatum system corrosion-proof tape), the thickness and tensile strength of a hardening mold corrosion-proof tape were measured.

[0024] 8. Thermal resistance JIS Based on Z-1902 (petrolatum system corrosion-proof tape), the thermal resistance of a hardening mold corrosion-proof tape was measured.

[0025] 9. Degree of hardness JIS Based on K-5400 (the coating commercial-test approach), it carried out by the test of the 1st term using the same test piece using the trial of the pencil degree of hardness by the hand lacing method.

[0026] 10. The drying sample was exposed to the bottom of a 23-degree C environment, the finger struck lightly, the binder has already adhered to the fingertip from the base material, and the time amount which desiccation until pulling yarn is lost takes (fingertip desiccation) was measured.
[0027] (Example 1) Stirring mixing of the vinyl-modified-alkyd-resin (Arakawa chemistry company make trade name: ARAKIDO, 70 % of the weight of solid content) 40.0 weight section, the micro crystallin wax (island trade company make, trade name:Saki 500, 70 % of the weight [of solid content], inside, and 35 % of the weight are rusr-proofer:calcium-sulfate combination) 30.0 weight section, the aluminum-hydroxide (Showa Denko K.K. make) 30.0 weight section, the tannic-acid 0.3 weight section, and the aluminum paste 2.0 weight section was carried out at homogeneity, and the binder which consists of viscous dispersion liquid was prepared. Subsequently, it is basis-weight 100 g/m2 with the coater shown in drawing 1 . The above-mentioned binder 2 was applied to both sides of a base material 1 for the polyester system nonwoven fabric. Although the obtained binder was viscosity, gelation is not carried out, but has sufficient fluidity on the occasion of spreading, and smooth spreading of it was completed as the following.
[0028] The above-mentioned binder 2 is supplied to the bat 3 formed in the inferior surface of tongue of a coater by the feeder which is not illustrated, and is applied to a base material 1 from a delivery 5 by the gear pump 4. The 1st page of a base material is supplied by the inferior surface of tongue from through and a side face at the same time the top face of a base material 1 is supplied, but with the gearings 6 and 6 of the pair compressed while biting this base material 1 from the upper and lower sides, if a binder 2 is trustworthy, it closes sinking [of the binder 2 of vertical both sides of this base material 1] in, and adhesion.
[0029] 7 is the **** roll of a pair, 8 is a slit adjusted so that it may become the value which set up the spreading thickness of a binder 2, and 9 is before a slit 8 and is a delivery which supplies a binder 2 additionally. Thus, thickness was finished as a product with 0.9mm, a width of face [of 150mm], and a die length of 10m, and the adhesive tape 10 with which the binder 2 was applied to the base material 1 was immediately put into the container which can hold the airtight like a vinyl bag, it eliminated the air in this vinyl bag, carried out the seal, and was saved. The engine performance of the obtained adhesive tape was shown in Table 1.
[0030] (Example 2) Stirring mixing of the vinyl-modified-alkyd-resin (Arakawa chemistry company make trade name: ARAKIDO, 70 % of the weight of solid content) 35.0 weight section, the micro crystallin wax (island trade company make, trade name:Saki 500, 70 % of the weight [of solid content], inside, and 35 % of the weight are rusr-proofer:calcium-sulfate combination) 35.0 weight section, the aluminum-hydroxide (Showa Denko K.K. make) 30.0 weight section, the tannic-acid 0.3 weight section, and the aluminum paste 2.0 weight section was carried out at homogeneity, and the binder which consists of viscous dispersion liquid was prepared. Although the obtained binder was viscosity, gelation was what does not carry out but has sufficient fluidity on the occasion of spreading. Subsequently, the above-mentioned binder 2 was applied to both sides of a base material 1 for the polyester system nonwoven fabric like the example 1 with the coater shown in drawing 1 . The engine performance of the obtained adhesive tape was shown in Table 1.
[0031] (Example 1 of a comparison) Stirring mixing of the vinyl-modified-alkyd-resin (Arakawa chemistry company make trade name: ARAKIDO, 70 % of the weight of solid content) 20.0 weight section, the micro crystallin wax (island trade company make, trade name:Saki 500, 70 % of the weight [of solid content], inside, and 35 % of the weight are rusr-proofer:calcium-sulfate combination) 50.0 weight section, the aluminum-hydroxide (Showa Denko K.K. make) 30.0 weight section, the tannic-acid 0.3 weight section, and the aluminum paste 2.0 weight section was carried out at homogeneity, and the binder which consists of viscous dispersion liquid was prepared. Subsequently, the above-mentioned binder 2 was applied to both sides of a base material 1 for the polyester system nonwoven fabric like the example 1 with the coater shown in drawing 1 . Although the above-mentioned binder was gelled and coating was possible, desiccation was slow and manufacture speed had to be reduced. The engine performance of the obtained adhesive tape was shown in Table 1.
[0032] (Example 2 of a comparison) Stirring mixing of the vinyl-modified-alkyd-resin (Arakawa

chemistry company make trade name: ARAKIDO, 70 % of the weight of solid content) 50.0 weight section, the micro crystallin wax (island trade company make, trade name:Saki 500, 70 % of the weight [of solid content], inside, and 35 % of the weight are rusr-proofer:calcium-sulfate combination) 20.0 weight section, the aluminum-hydroxide (Showa Denko K.K. make) 30.0 weight section, the tannic-acid 0.3 weight section, and the aluminum paste 2.0 weight section was carried out at homogeneity, and the binder which consists of viscous dispersion liquid was prepared. Subsequently, although spreading was tried [the polyester system nonwoven fabric] for the above-mentioned binder 2 to both sides of a base material 1 like the example 1 with the coater shown in drawing 1 , the above-mentioned binder had small viscosity, and the rate of drying was and coating was completely early impossible.

[0033]

[Table 1]

	実施例 1	実施例 2	比較例 1
1. 塩水噴霧テスト	発錆なし	発錆なし	発錆なし
2. 耐候性テスト	発錆なし	発錆なし	発錆なし
3. 絶縁抵抗(Ω・m²)	1.1 ×10¹¹	1.1 ×10¹¹	4.5 ×10¹⁰
4. 燃焼性テスト 燃焼時間 (秒)	7 3	7 4	9 2
燃焼長さ (mm)	1 8	1 8	4 5
5. 吸 水 率(%)	0. 3	0. 3	0. 5
6. 厚 さ(mm)	0. 9	0. 9	0. 9
7. 引張強度(Kg/25mm)	1 5	1 5	1 5
8. 耐 熱 性 (℃)	1 5 0	1 5 0	1 2 0
9. 硬度 (鉛筆硬度)	2 H	2 H	H
10. 乾燥性 (時間)	2	2	3

[0034] When corrosion-protection work is carried out using the hardening mold corrosion-proof tape obtained in the case of the examples 1-2 of this invention so that clearly also from Table 1, this hardening mold corrosion-proof tape touches air, and is hardened, and all form the hard front face of 2H by the pencil degree of hardness. Moreover, it has checked that, as for water absorption, 40% of improvement was accepted to the example 1 of a comparison, and thermal resistance was similarly improved from 120 degrees C to 150 degrees C.

[0035]

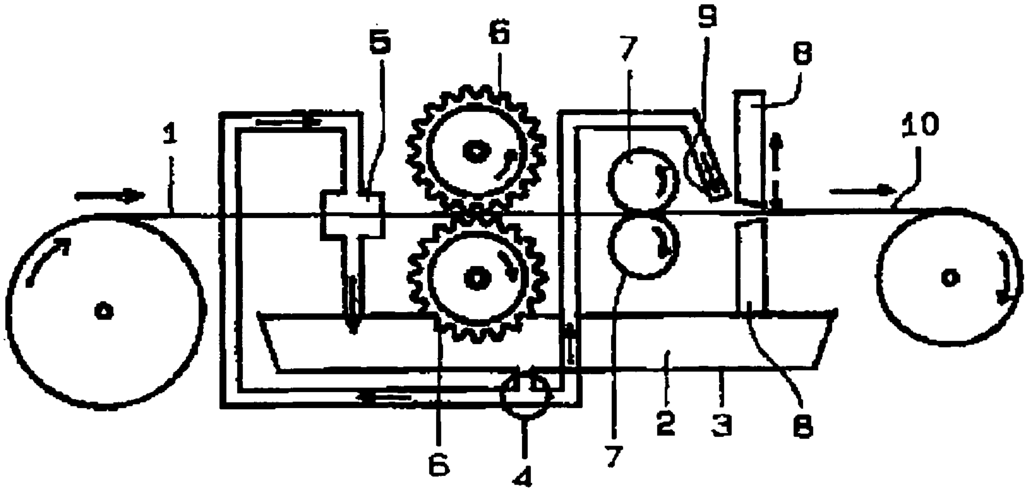
[Effect of the Invention] Although the binder constituent with which the hardening mold corrosion-proof tape of this invention used the resin which can be hardened in air to both sides of a base material 25 to 45% of the weight to the binder constituent whole quantity except a solvent, and used 8 - 18 % of the weight of waxes as the principal component, and the nonflammable-ized agent, the rusr-proofer, the optical cutoff agent, etc. were added by this is applied Since a binder constituent has gelation in the condition of the viscous solution which is extent which started for a while when waxes are blended with resin in the above-mentioned range and a nonflammable-ized agent, a rusr-proofer, an optical cutoff agent, adhesion resin, etc. are added by this Coating can carry out very easily as it appears also in drying (fingertip desiccation).

[0036] Moreover, since the hardening mold corrosion-proof tape by which coating was carried out like the above was contained by the airtight container and the gas in this container was eliminated, for example, it opened the container and was set as the object of corrosion-protective covering on the occasion of various corrosion-protection work, when it winds around outdoor piping and the front face is covered, a binder layer stiffens a lifting and a binder layer for crosslinking reaction with surrounding air. Therefore, the field where this corrosion-protection work was performed shows after construction the outstanding engine performance which showed the degree of hardness of 2H harder than the surface hardness (pencil degree-of-hardness 1H) of the rigid PVC plate, in addition has been sharply improved in thermal resistance and water absorption. Moreover, a salt fog test, weatherability, insulation resistance, an inflammable test, and many engine performance of tensile strength also clear a value of standard enough.

[0037] Like the above statement, this invention hardening mold corrosion-proof tape after corrosion-protection work Since the field which has thermal resistance and cannot do the large blemish of surface hardness easily is given The corrosion prevention of piping put to sunlight on piping for migration and the outdoors of a high-temperature fluid sake, When it could be used with large applicability, and a worker and a check member walk these piping top, fasten with a rope etc. or grind against the front face of piping and others by the conveyance object at the time of construction of piping, and fixed check A blemish goes into the corrosion prevention side made with the hardening mold corrosion-proof tape of this invention, storm sewage invades from this section and there is no fear of making piping corrode.

[0038]

[Translation done.]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